Editorial

Welcome to the Journal of STEM Education: Innovations and Research, Volume 9, Issue 1. This issue features five papers that further a variety of advancements in STEM education and research in a changing world. The concepts discussed in this issue include multiple responses to the growing need for STEM professionals, a method for evaluating a skill that is becoming increasingly important among engineering students: teamwork, and a discussion of the changing concerns about diversity in the higher education community.

The first paper, contributed by Yi-fang Brook Wu and Xin Chen, reveals a gap between an expected growth in STEM job opportunities from 2000 to 2010 and prospective students and professionals in those fields: the demand for workers is much higher than the upcoming supply. To reconcile the difference, the authors argue for advancements in distance education, or eLearning, to allow students to participate in STEM degree programs regardless of geographic location. The authors propose the development of a "Virtual Classroom" software application that would relieve much of the workload of instructors teaching online classes and help ensure objectivity, among other benefits.

Stephanie G. Adams, Carmen R. Zafft, Maria Carolina Molano, and Kumar Rao discuss in the second paper the issue of measuring teamwork skills in engineering education. The ability of prospective employees has become a key priority for businesses, so engineering educators need a well-developed measurement tool to allow them to understand and implement effective team-building activities in classrooms. The goal of this paper is to develop just such a protocol for evaluating teamwork development in engineering education.

The third paper evaluates a program that aims to boost middle-school students' interest in STEM programs and careers. Specifically, Paul Lam, Dennis Doverspike, Julie Zhao, John Zhe, and Craig Menzemer focus on the potential for students with learning disabilities to join the STEM community, both as students and professionals. This paper presents the authors' analysis of a year-long program that aimed to further the STEM interests and understanding of middle-school students in that group.

In the fourth paper, Nancy Bachman, Paul J. Bischoff, Hugh Gallagher, Sunil Labroo, and John C. Schaumloffel also focus on recruiting young people into the STEM fields, particularly engineering, physics, and chemistry. The authors' research establishes a decline in the academic performance of American students in these fields and emphasizes the need to improve students' motivation and confidence to enter the STEM fields. To achieve that goal, this paper proposes the use of science camps for recruitment into and retention in the physical sciences.

Finally, in the fifth paper, Juan E. Gilbert and Chance W. Lewis discuss the issue of diversity as an aspect of admissions at higher-education institutions. The authors establish that diversity functions as a positive value for universities and research communities but has recently become an uncertain subject of academic and legal policies. This paper seeks to provide direction to the education community such that diversity can be achieved within current legal parameters.

I greatly appreciate the work of the authors whose work appears in this issue and the wide range of ideas that both the authors and reviewers have contributed. I hope you will also find them as intriguing and enlightening as I have.

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